



SEQUENCE LISTING

<110> BATTAGLINO, PETER  
FEDER, JOHN N  
MINTIER, GABE  
NELSON, THOMAS C  
RAMANATHAN, CHANDRA S  
WESTPHAL, RYAN  
CACACE, ANGELA  
BARBER, LAUREN  
HAWKEN, DONALD R  
KORNACKER, MICHAEL G

<120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY8,  
EXPRESSED HIGHLY IN BRAIN

<130> D0047NP

<140> 09/992,238

<141> 2001-11-13

<150> 60/317166

<151> 2001-09-04

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<213> Homo sapiens

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Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln
      50              55              60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln
      65              70              75              80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe
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Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His

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100

105

110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp  
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Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
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Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
 180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
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Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
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Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
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Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
 325 330 335

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Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu

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385	390	395 400
Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys		
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Phe Leu Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro		
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Gln Trp Val Ile Thr Ile Ile Ile Trp Leu Phe Phe Leu Gln Cys Cys		
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Ile His Pro Tyr Val Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu		
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Ile Gln Asp Met Leu Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys		
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Pro Pro Thr Asn Tyr Lys Thr Val Glu Leu Val Phe Ile Ala Thr Val  
35 40 45

Thr Gly Ser Leu Ser Leu Val Thr Val Val Gly Asn Ile Leu Val Met  
50 55 60

Leu Ser Ile Lys Val Asn Arg Gln Leu Gln Thr Val Asn Asn Tyr Phe  
65 70 75 80

Leu Phe Ser Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met

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Ser	Val	Met	Asn	Leu	Leu	Ile	Ile	Ser	Phe	Asp	Arg	Tyr	Phe	Cys	Val				
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Thr	Lys	Pro	Leu	Thr	Tyr	Pro	Ala	Arg	Arg	Thr	Thr	Lys	Met	Ala	Gly				
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Tyr	Ile	His	Ile	Ser	Leu	Ala	Ser	Arg	Ser	Arg	Val	Arg	Arg	His	Lys				
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Val	Asn	Pro	Thr	Ser	Lys	Trp	Ser	Lys	Ile	Lys	Ile	Val	Thr	Lys	Gln				

340	345	350
Thr Gly Thr Glu Ser Val Thr Ala Ile Glu Ile Val Pro Ala Lys Ala		
355	360	365
Gly Ala Ser Asp His Asn Ser Leu Ser Asn Ser Arg Pro Ala Asn Val		
370	375	380
Ala Arg Lys Phe Ala Ser Ile Ala Arg Ser Gln Val Arg Lys Lys Arg		
385	390	395 400
Gln Met Ala Ala Arg Glu Lys Lys Val Thr Arg Thr Ile Phe Ala Ile		
405	410	415
Leu Leu Ala Phe Ile Leu Thr Trp Thr Pro Tyr Asn Val Met Val Leu		
420	425	430
Ile Asn Thr Phe Cys Glu Thr Cys Val Pro Glu Thr Val Trp Ser Ile		
435	440	445
Gly Tyr Trp Leu Cys Tyr Val Asn Ser Thr Ile Asn Pro Ala Cys Tyr		
450	455	460
Ala Leu Cys Asn Ala Thr Phe Lys Lys Thr Phe Lys His Leu Leu Met		
465	470	475 480
Cys Gln Tyr Arg Asn Ile Gly Thr Ala Arg		
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<212> PRT

<213> Caenorhabditis elegans

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Ile Arg Asn Gln Tyr His Gln His Glu Thr Ile Gln Ile Leu Lys Gly
35 40 45
Ser Ala Leu Phe Leu Leu Val Leu Trp Thr Ile Phe Ala Asn Ser Leu
50 55 60

Val Phe Ile Val Leu Tyr Lys Asn Pro Arg Leu Gln Thr Val Pro Asn  
65 70 75 80

Leu Leu Val Gly Asn Leu Ala Phe Ser Asp Leu Ala Leu Gly Leu Ile  
85 90 95

Val Leu Pro Leu Ser Ser Val Tyr Ala Ile Ala Gly Glu Trp Val Phe  
100 105 110

Pro Asp Ala Leu Cys Glu Val Phe Val Ser Ala Asp Ile Leu Cys Ser  
115 120 125

Thr Ala Ser Ile Trp Asn Leu Ser Ile Val Gly Leu Asp Arg Tyr Trp  
130 135 140

Ala Ile Thr Ser Pro Val Ala Tyr Met Ser Lys Arg Asn Lys Arg Thr  
145 150 155 160

Ala Gly Ile Met Ile Leu Ser Val Trp Ile Ser Ser Ala Leu Ile Ser  
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Leu Ala Pro Leu Leu Gly Trp Lys Gln Thr Ala Gln Thr Pro Asn Leu  
180 185 190

Ile Tyr Glu Lys Asn Asn Thr Val Arg Gln Cys Thr Phe Leu Asp Leu  
195 200 205

Pro Ser Tyr Thr Val Tyr Ser Ala Thr Gly Ser Phe Phe Ile Pro Thr  
210 215 220

Leu Leu Met Phe Phe Val Tyr Phe Lys Ile Tyr Gln Ala Phe Ala Lys  
225 230 235 240

His Arg Ala Arg Gln Ile Tyr Arg Gln Lys Val Ile Arg Lys His Ile  
245 250 255

Glu Ser Thr Ile Leu His Glu Ile Ser His Val Leu Pro Thr Ser Asp  
260 265 270

Glu Phe Ala Lys Glu Glu Glu Glu Glu Glu Asp Ser Glu Ser Ser Gly  
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Gln Val Glu Asn Gly Leu Gly Asn Gly Asn Asp Ala Ile Ile Glu Glu  
290 295 300

Asp Glu Cys Glu Asp Glu Asp Ser Asp Glu Lys Arg Asp Asp His Thr  
305 310 315 320



Ser Met Thr Thr Val Thr Ala Thr Val Thr Gly Pro Thr Glu Ala Pro  
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Tyr Met Lys Arg Glu Ala Lys Ile Ser Lys Ser Val Pro Ile Glu Lys  
 340 345 350

Glu Ser Ala Ile Gln Lys Arg Glu Ala Lys Pro Met Arg Ser Val Met  
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Ala Ile Ser Tyr Glu Lys Val Lys Arg His Lys Asn Arg Lys Glu Arg  
 370 375 380

Ile Tyr Arg Lys Ser Leu Gln Arg Lys Pro Lys Ala Ile Ser Ala Ala  
 385 390 395 400

Lys Glu Arg Arg Gly Val Lys Val Leu Gly Ile Ile Leu Gly Cys Phe  
 405 410 415

Thr Val Cys Trp Ala Pro Phe Phe Thr Met Tyr Val Leu Val Gln Phe  
 420 425 430

Cys Lys Asp Cys Ser Pro Asn Ala His Ile Glu Met Phe Ile Thr Trp  
 435 440 445

Leu Gly Tyr Ser Asn Ser Ala Met Asn Pro Ile Ile Tyr Thr Val Phe  
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Lys Pro Ser Ser Thr Ser Arg Val  
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<211> 423

<212> PRT

<213> Homo sapiens

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Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr  
 35 40 45



Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser  
50 55 60

Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala  
65 70 75 80

Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val  
85 90 95

Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr  
100 105 110

Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys  
115 120 125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr  
130 135 140

Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg  
145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile  
165 170 175

Ser Ile Pro Pro Met Leu Gly Trp Arg Ser Ala Glu Asp Arg Ala Asn  
180 185 190

Pro Asp Ala Cys Ile Ile Ser Gln Asp Pro Gly Tyr Thr Ile Tyr Ser  
195 200 205

Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr  
210 215 220

Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys  
225 230 235 240

Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro  
245 250 255

Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp  
260 265 270

Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala  
275 280 285

Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn  
290 295 300

Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser  
 305 310 315 320

Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile  
 325 330 335

Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met  
 340 345 350

Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val  
 355 360 365

Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala  
 370 375 380

Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile  
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Tyr Ala Tyr Phe Asn Lys Asp Phe Gln Ser Ala Phe Lys Lys Ile Leu  
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Arg Cys Lys Phe His Arg His  
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<212> PRT

<213> Mus musculus

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Phe Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe  
 35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu  
 50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val  
 65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr

				85						90					95	
Gln	Val	Leu	Asn	Lys	Trp	Thr	Leu	Gly	Gln	Val	Thr	Cys	Asp	Leu	Phe	
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Ile	Ala	Leu	Asp	Val	Leu	Cys	Cys	Thr	Ser	Ser	Ile	Leu	His	Leu	Cys	
			115					120					125			
Ala	Ile	Ala	Leu	Asp	Arg	Tyr	Trp	Ala	Ile	Thr	Asp	Pro	Ile	Asp	Tyr	
			130					135					140			
Val	Asn	Lys	Arg	Thr	Pro	Arg	Arg	Ala	Ala	Ala	Leu	Ile	Ser	Leu	Thr	
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Trp	Leu	Ile	Gly	Phe	Leu	Ile	Ser	Ile	Pro	Pro	Met	Leu	Gly	Trp	Arg	
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Ala	Pro	Glu	Asp	Arg	Ser	Asn	Pro	Asn	Glu	Cys	Thr	Ile	Ser	Lys	Asp	
				180					185					190		
His	Gly	Tyr	Thr	Ile	Tyr	Ser	Thr	Phe	Gly	Ala	Phe	Tyr	Ile	Pro	Leu	
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Leu	Leu	Met	Leu	Val	Leu	Tyr	Gly	Arg	Ile	Phe	Arg	Ala	Ala	Arg	Phe	
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Arg	Ile	Arg	Lys	Thr	Val	Lys	Lys	Val	Glu	Lys	Lys	Gly	Ala	Gly	Thr	
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Ser	Phe	Gly	Thr	Ser	Ser	Ala	Pro	Pro	Pro	Lys	Lys	Ser	Leu	Asn	Gly	
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Gln	Pro	Gly	Ser	Gly	Asp	Cys	Arg	Arg	Ser	Ala	Glu	Asn	Arg	Ala	Val	
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Leu	Glu	Arg	Lys	Asn	Glu	Arg	Thr	Ala	Glu	Ala	Lys	Arg	Lys	Met	Ala	
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Pro Phe Cys Glu Ser Ser Cys His Met Pro Glu Leu Leu Gly Ala Ile		
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Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr		
385	390	395 400
Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys		
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Gly Ser Gly Ser Leu Pro Asp Pro Glu Leu Ser Tyr Gln Ile Ile Thr		
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Ser Leu Phe Leu Gly Ala Leu Ile Leu Cys Ser Ile Phe Gly Asn Ser		
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Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala		
65	70	75 80
Asn Tyr Leu Ile Gly Ser Leu Ala Val Thr Asp Leu Met Val Ser Val		
85	90	95
Leu Val Leu Pro Met Ala Ala Leu Tyr Gln Val Leu Asn Lys Trp Thr		
100	105	110
Leu Gly Gln Asp Ile Cys Asp Leu Phe Ile Ala Leu Asp Val Leu Cys		
115	120	125

Cys Thr Ser Ser Ile Leu His Leu Cys Ala Ile Ala Leu Asp Arg Tyr  
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Trp Ala Ile Thr Asp Pro Ile Asp Tyr Val Asn Lys Arg Thr Pro Arg  
145 150 155 160

Arg Ala Ala Val Leu Ile Ser Val Thr Trp Leu Ile Gly Phe Ser Ile  
165 170 175

Ser Ile Pro Pro Met Leu Gly Trp Arg Ser Ala Glu Asp Arg Ala Asn  
180 185 190

Pro Asp Ala Cys Ile Ile Ser Gln Asp Pro Gly Tyr Thr Ile Tyr Ser  
195 200 205

Thr Phe Gly Ala Phe Tyr Ile Pro Leu Ile Leu Met Leu Val Leu Tyr  
210 215 220

Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys  
225 230 235 240

Lys Thr Glu Lys Ala Lys Ala Ser Asp Met Cys Leu Thr Leu Ser Pro  
245 250 255

Ala Val Phe His Lys Arg Ala Asn Gly Asp Ala Val Ser Ala Glu Trp  
260 265 270

Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala  
275 280 285

Val Arg His Gly Glu Glu Met Glu Ser Leu Glu Ile Ile Glu Val Asn  
290 295 300

Ser Asn Ser Lys Thr His Leu Pro Leu Pro Asn Thr Pro Gln Ser Ser  
305 310 315 320

Ser His Glu Asn Ile Asn Glu Lys Thr Thr Gly Thr Arg Arg Lys Ile  
325 330 335

Ala Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met  
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Gly Thr Phe Ile Phe Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val  
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Leu Pro Phe Cys Ala Glu Asn Cys Tyr Met Pro Glu Trp Leu Gly Ala  
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Val Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Ile Ile  
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Arg Cys Lys Phe His Arg His  
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<210> 12  
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 <213> *Lymnaea stagnalis*

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 35 40 45

Ser Tyr Gly Leu Thr Gly Gln Phe Ile Asn Gly Ser His Ser Ser Arg  
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Ser Arg Asp Asn Ala Ser Ala Asn Asp Thr Ser Ala Thr Asn Met Thr  
 65 70 75 80

Asp Asp Arg Tyr Trp Ser Leu Thr Val Tyr Ser His Glu His Leu Val  
 85 90 95

Leu Thr Ser Val Ile Leu Gly Leu Phe Val Leu Cys Cys Ile Ile Gly  
 100 105 110

Asn Cys Phe Val Ile Ala Ala Val Met Leu Glu Arg Ser Leu His Asn  
 115 120 125

Val Ala Asn Tyr Leu Ile Leu Ser Leu Ala Val Ala Asp Leu Met Val  
 130 135 140

Ala Val Leu Val Met Pro Leu Ser Val Val Ser Glu Ile Ser Lys Val  
 145 150 155 160

Trp Phe Leu His Ser Glu Val Cys Asp Met Trp Ile Ser Val Asp Val  
 165 170 175

Leu Cys Cys Thr Ala Ser Ile Leu His Leu Val Ala Ile Ala Met Asp  
 180 185 190

Arg Tyr Trp Ala Val Thr Ser Ile Asp Tyr Ile Arg Arg Arg Ser Ala  
 195 200 205

Arg Arg Ile Leu Leu Met Ile Met Val Val Trp Ile Val Ala Leu Phe  
 210 215 220

Ile Ser Ile Pro Pro Leu Phe Gly Trp Arg Asp Pro Asn Asn Asp Pro  
 225 230 235 240

Asp Lys Thr Gly Thr Cys Ile Ile Ser Gln Asp Lys Gly Tyr Thr Ile  
 245 250 255

Phe Ser Thr Val Gly Ala Phe Tyr Leu Pro Met Leu Val Met Met Ile  
 260 265 270

Ile Tyr Ile Arg Ile Trp Leu Val Ala Arg Ser Arg Ile Arg Lys Asp  
 275 280 285

Lys Phe Gln Met Thr Lys Ala Arg Leu Lys Thr Glu Glu Thr Thr Leu  
 290 295 300

Val Ala Ser Pro Lys Thr Glu Tyr Ser Val Val Ser Asp Cys Asn Gly  
 305 310 315 320

Cys Asn Ser Pro Asp Ser Thr Thr Glu Lys Lys Lys Arg Arg Ala Pro  
 325 330 335

Phe Lys Ser Tyr Gly Cys Ser Pro Arg Pro Glu Arg Lys Lys Asn Arg  
 340 345 350

Ala Lys Lys Leu Pro Glu Asn Ala Asn Gly Val Asn Ser Asn Ser Ser  
 355 360 365

Ser Ser Glu Arg Leu Lys Gln Ile Gln Ile Glu Thr Ala Glu Ala Phe  
 370 375 380

Ala Asn Gly Cys Ala Glu Glu Ala Ser Ile Ala Met Leu Glu Arg Gln  
 385 390 395 400

Cys Asn Asn Gly Lys Lys Ile Ser Ser Asn Asp Thr Pro Tyr Ser Arg  
 405 410 415

Thr Arg Glu Lys Leu Glu Leu Lys Arg Glu Arg Lys Ala Ala Arg Thr  
 420 425 430



Leu Ala Ile Ile Thr Gly Ala Phe Leu Ile Cys Trp Leu Pro Phe Phe  
 435 440 445

Ile Ile Ala Leu Ile Gly Pro Phe Val Asp Pro Glu Gly Ile Pro Pro  
 450 455 460

Phe Ala Arg Ser Phe Val Leu Trp Leu Gly Tyr Phe Asn Ser Leu Leu  
 465 470 475 480

Asn Pro Ile Ile Tyr Thr Ile Phe Ser Pro Glu Phe Arg Ser Ala Phe  
 485 490 495

Gln Lys Ile Leu Phe Gly Lys Tyr Arg Arg Gly His Arg  
 500 505

<210> 13

<211> 572

<212> PRT

<213> Homo sapiens

<400> 13

Met Thr Phe Arg Asp Leu Leu Ser Val Ser Phe Glu Gly Pro Arg Pro  
 1 5 10 15

Asp Ser Ser Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Gly Ser Ala  
 20 25 30

Gly Gly Ala Ala Pro Ser Glu Gly Pro Ala Val Gly Gly Val Pro Gly  
 35 40 45

Gly Ala Gly Gly Gly Gly Gly Val Val Gly Ala Gly Ser Gly Glu Asp  
 50 55 60

Asn Arg Ser Ser Ala Gly Glu Pro Gly Ser Ala Gly Ala Gly Gly Asp  
 65 70 75 80

Val Asn Gly Thr Ala Ala Val Gly Gly Leu Val Val Ser Ala Gln Gly  
 85 90 95

Val Gly Val Gly Val Phe Leu Ala Ala Phe Ile Leu Met Ala Val Ala  
 100 105 110

Gly Asn Leu Leu Val Ile Leu Ser Val Ala Cys Asn Arg His Leu Gln  
 115 120 125

Thr Val Thr Asn Tyr Phe Ile Val Asn Leu Ala Val Ala Asp Leu Leu

130		135		140
Leu Ser Ala Thr Val	Leu Pro Phe Ser Ala Thr	Met Glu Val Leu Gly		
145	150	155	160	
Phe Trp Ala Phe Gly Arg Ala Phe Cys Asp Val	Trp Ala Ala Val Asp			
	165	170	175	
Val Leu Cys Cys Thr Ala Ser Ile Leu Ser Leu Cys Thr Ile Ser Val				
	180	185	190	
Asp Arg Tyr Val Gly Val Arg His Ser Leu Lys Tyr Pro Ala Ile Met				
	195	200	205	
Thr Glu Arg Lys Ala Ala Ala Ile Leu Ala Leu Leu Trp Val Val Ala				
	210	215	220	
Leu Val Val Ser Val Gly Pro Leu Leu Gly Trp Lys Glu Pro Val Pro				
	225	230	235	240
Pro Asp Glu Arg Phe Cys Gly Ile Thr Glu Glu Ala Gly Tyr Ala Val				
	245	250	255	
Phe Ser Ser Val Cys Ser Phe Tyr Leu Pro Met Ala Val Ile Val Val				
	260	265	270	
Met Tyr Cys Arg Val Tyr Val Val Ala Arg Ser Thr Thr Arg Ser Leu				
	275	280	285	
Glu Ala Gly Val Lys Arg Glu Arg Gly Lys Ala Ser Glu Val Val Leu				
	290	295	300	
Arg Ile His Cys Arg Gly Ala Ala Thr Gly Ala Asp Gly Ala His Gly				
	305	310	315	320
Met Arg Ser Ala Lys Gly His Thr Phe Arg Ser Ser Leu Ser Val Arg				
	325	330	335	
Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu Ala Ile				
	340	345	350	
Val Val Gly Val Phe Val Leu Cys Trp Phe Pro Phe Phe Phe Val Leu				
	355	360	365	
Pro Leu Gly Ser Leu Phe Pro Gln Leu Lys Pro Ser Glu Gly Val Phe				
	370	375	380	
Lys Val Ile Phe Trp Leu Gly Tyr Phe Asn Ser Cys Val Asn Pro Leu				



Gly Pro Glu Gly Pro Ala Val Gly Gly Val Pro Gly Ala Thr Gly Gly  
 35 40 45

Ser Ala Val Val Gly Thr Gly Ser Gly Glu Asp Asn Gln Ser Ser Thr  
 50 55 60

Ala Glu Ala Gly Ala Ala Ala Ser Gly Glu Val Asn Gly Ser Ala Ala  
 65 70 75 80

Val Gly Gly Leu Val Val Ser Ala Gln Gly Val Gly Val Gly Val Phe  
 85 90 95

Leu Ala Ala Phe Ile Leu Thr Ala Val Ala Gly Asn Leu Leu Val Ile  
 100 105 110

Leu Ser Val Ala Cys Asn Arg His Leu Gln Thr Val Thr Asn Tyr Phe  
 115 120 125

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ala Ala Val Leu  
 130 135 140

Pro Phe Ser Ala Thr Met Glu Val Leu Gly Phe Trp Pro Phe Gly Arg  
 145 150 155 160

Thr Phe Cys Asp Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 165 170 175

Ser Ile Leu Ser Leu Cys Thr Ile Ser Val Asp Arg Tyr Val Gly Val  
 180 185 190

Arg His Ser Leu Lys Tyr Pro Ala Ile Met Thr Glu Arg Lys Ala Ala  
 195 200 205

Ala Ile Leu Ala Leu Leu Trp Ala Val Ala Leu Val Val Ser Val Gly  
 210 215 220

Pro Leu Leu Gly Trp Lys Glu Pro Val Pro Pro Asp Glu Arg Phe Cys  
 225 230 235 240

Gly Ile Thr Glu Glu Val Gly Tyr Ala Ile Phe Ser Ser Val Cys Ser  
 245 250 255

Phe Tyr Leu Pro Met Ala Val Ile Val Val Met Tyr Cys Arg Val Tyr  
 260 265 270

Val Val Ala Arg Ser Thr Thr Arg Ser Leu Glu Ala Gly Ile Lys Arg  
 275 280 285

Glu	Pro	Gly	Lys	Ala	Ser	Glu	Val	Val	Leu	Arg	Ile	His	Cys	Arg	Gly	290	295	300
Ala	Ala	Thr	Ser	Ala	Lys	Gly	Asn	Pro	Gly	Thr	Gln	Ser	Ser	Lys	Gly	305	310	315 320
His	Thr	Leu	Arg	Ser	Ser	Leu	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	325	330	335
Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Ala	Ile	Val	Val	Gly	Val	Phe	Val	340	345	350
Leu	Cys	Trp	Phe	Pro	Phe	Phe	Phe	Val	Leu	Pro	Leu	Gly	Ser	Leu	Phe	355	360	365
Pro	Gln	Leu	Lys	Pro	Ser	Glu	Gly	Val	Phe	Lys	Val	Ile	Phe	Trp	Leu	370	375	380
Gly	Tyr	Phe	Asn	Ser	Cys	Val	Asn	Pro	Leu	Ile	Tyr	Pro	Cys	Ser	Ser	385	390	395 400
Arg	Glu	Phe	Lys	Arg	Ala	Phe	Leu	Arg	Leu	Leu	Arg	Cys	Gln	Cys	Arg	405	410	415
Arg	Arg	Arg	Arg	Arg	Leu	Trp	Pro	Ser	Leu	Arg	Pro	Pro	Leu	Ala	Ser	420	425	430
Leu	Asp	Arg	Arg	Pro	Ala	Leu	Arg	Leu	Cys	Pro	Gln	Pro	Ala	His	Arg	435	440	445
Thr	Pro	Arg	Gly	Ser	Pro	Ser	Pro	His	Cys	Thr	Pro	Arg	Pro	Gly	Leu	450	455	460
Arg	Arg	His	Ala	Gly	Gly	Ala	Gly	Phe	Gly	Leu	Arg	Pro	Ser	Lys	Ala	465	470	475 480
Ser	Leu	Arg	Leu	Arg	Glu	Trp	Arg	Leu	Leu	Gly	Pro	Leu	Gln	Arg	Pro	485	490	495
Thr	Thr	Gln	Leu	Arg	Ala	Lys	Val	Ser	Ser	Leu	Ser	His	Lys	Phe	Arg	500	505	510
Ser	Gly	Gly	Ala	Arg	Arg	Ala	Glu	Thr	Ala	Cys	Ala	Leu	Arg	Ser	Glu	515	520	525
Val	Glu	Ala	Val	Ser	Leu	Asn	Val	Pro	Gln	Asp	Gly	Ala	Glu	Ala	Val	530	535	540

Ile	Cys	Gln	Ala	Tyr	Glu	Pro	Gly	Asp	Leu	Ser	Asn	Leu	Arg	Glu	Thr
545					550					555					560

Asp Ile

<210> 15

<211> 499

<212> PRT

<213> Homo sapiens

<400> 15

Met	Val	Phe	Leu	Ser	Gly	Asn	Ala	Ser	Asp	Ser	Ser	Asn	Cys	Thr	Gln
1				5					10					15	

Pro	Pro	Ala	Pro	Val	Asn	Ile	Ser	Lys	Ala	Ile	Leu	Leu	Gly	Val	Ile
			20					25					30		

Leu	Gly	Gly	Leu	Ile	Leu	Phe	Gly	Val	Leu	Gly	Asn	Ile	Leu	Val	Ile
	35						40					45			

Leu	Ser	Val	Ala	Cys	His	Arg	His	Leu	His	Ser	Val	Thr	His	Tyr	Tyr
	50					55					60				

Ile	Val	Asn	Leu	Ala	Val	Ala	Asp	Leu	Leu	Leu	Thr	Ser	Thr	Val	Leu
65					70					75					80

Pro	Phe	Ser	Ala	Ile	Phe	Glu	Val	Leu	Gly	Tyr	Trp	Ala	Phe	Gly	Arg
				85					90					95	

Val	Phe	Cys	Asn	Ile	Trp	Ala	Ala	Val	Asp	Val	Leu	Cys	Cys	Thr	Ala
			100					105					110		

Ser	Ile	Met	Gly	Leu	Cys	Ile	Ile	Ser	Ile	Asp	Arg	Tyr	Ile	Gly	Val
		115					120					125			

Ser	Tyr	Pro	Leu	Arg	Tyr	Pro	Thr	Ile	Val	Thr	Gln	Arg	Arg	Gly	Leu
	130					135					140				

Met	Ala	Leu	Leu	Cys	Val	Trp	Ala	Leu	Ser	Leu	Val	Ile	Ser	Ile	Gly
145					150					155					160

Pro	Leu	Phe	Gly	Trp	Arg	Gln	Pro	Ala	Pro	Glu	Asp	Glu	Thr	Ile	Cys
				165					170					175	

Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser
		180						185					190		

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
195 200 205  
Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
210 215 220  
Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
225 230 235 240  
Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
245 250 255  
Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
260 265 270  
Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
275 280 285  
Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
290 295 300  
Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
305 310 315 320  
Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
325 330 335  
Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
340 345 350  
Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
355 360 365  
Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
370 375 380  
Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
385 390 395 400  
Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
405 410 415  
Ser Ser Cys Thr Thr Ala Arg Thr Lys Ser Arg Ser Val Thr Arg Leu  
420 425 430  
Glu Cys Ser Gly Met Ile Leu Ala His Cys Asn Leu Arg Leu Pro Gly  
435 440 445

Ser Arg Asp Ser Pro Ala Ser Ala Ser Gln Ala Ala Gly Thr Thr Gly  
 450 455 460

Asp Val Pro Pro Gly Arg Arg His Gln Ala Gln Leu Ile Phe Val Phe  
 465 470 475 480

Leu Val Glu Thr Gly Phe His His Val Gly Gln Asp Asp Leu Asp Leu  
 485 490 495

Leu Thr Ser

<210> 16

<211> 429

<212> PRT

<213> Homo sapiens

<400> 16

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly



145		150		155		160									
Pro	Leu	Phe	Gly	Trp	Arg	Gln	Pro	Ala	Pro	Glu	Asp	Glu	Thr	Ile	Cys
			165					170						175	
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser
		180					185						190		
Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr
	195						200					205			
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr
	210					215					220				
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn
225				230						235					240
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His
			245						250					255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys
		260						265					270		
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe
	275						280					285			
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser
	290					295					300				
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys
305				310						315				320	
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala
			325						330					335	
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Arg	Arg	Lys	Gln	Ser	Ser
		340						345					350		
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu
	355						360					365			
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr
	370					375					380				
Phe	Tyr	Arg	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe
385				390						395				400	
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Ser	Lys	Asp	Gln

405	410	415
Ser Ser Cys Thr Thr Ala Arg Gly His Thr Pro Met Thr		
420	425	
<210> 17		
<211> 455		
<212> PRT		
<213> Homo sapiens		
<400> 17		
Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln		
1	5	10
		15
Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile		
20	25	30
Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile		
35	40	45
Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr		
50	55	60
Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu		
65	70	75
		80
Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg		
85	90	95
Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala		
100	105	110
Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val		
115	120	125
Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu		
130	135	140
Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly		
145	150	155
		160
Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys		
165	170	175
Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser		
180	185	190

Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr	195	200	205	
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr	210	215	220	
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn	225	230	235	240
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His	245	250	255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	260	265	270	
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe	275	280	285	
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser	290	295	300	
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys	305	310	315	320
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala	325	330	335	
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Cys	Arg	Lys	Gln	Ser	Ser	340	345	350	
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu	355	360	365	
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr	370	375	380	
Phe	Tyr	Arg	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe	385	390	395	400
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Ser	Lys	Asp	Gln	405	410	415	
Ser	Ser	Cys	Thr	Thr	Ala	Arg	Arg	Gly	Met	Asp	Cys	Arg	Tyr	Phe	Thr	420	425	430	
Lys	Asn	Cys	Arg	Glu	His	Ile	Lys	His	Val	Asn	Phe	Met	Met	Pro	Pro	435	440	445	

Trp Arg Lys Gly Leu Glu Cys  
 450 455

<210> 18

<211> 466

<212> PRT

<213> Rattus norvegicus

<400> 18

Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val  
 130 135 140

Arg Ala Leu Leu Cys Val Trp Val Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Val Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr	210	215	220	
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn	225	230	235	240
Val	Pro	Ala	Glu	Gly	Gly	Gly	Val	Ser	Ser	Ala	Lys	Asn	Lys	Thr	His	245	250	255	
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	260	265	270	
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe	275	280	285	
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser	290	295	300	
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys	305	310	315	320
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala	325	330	335	
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Arg	Arg	Arg	Gln	Ser	Ser	340	345	350	
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Leu	Glu	355	360	365	
Gly	Gln	His	Arg	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Gly	Glu	Thr	370	375	380	
Phe	Tyr	Lys	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe	385	390	395	400
Ser	Ser	Met	Pro	Gln	Gly	Ser	Ala	Arg	Ile	Thr	Val	Pro	Lys	Asp	Gln	405	410	415	
Ser	Ala	Cys	Thr	Thr	Ala	Arg	Val	Arg	Ser	Lys	Ser	Phe	Leu	Gln	Val	420	425	430	
Cys	Cys	Cys	Val	Gly	Ser	Ser	Ala	Pro	Arg	Pro	Glu	Glu	Asn	His	Gln	435	440	445	
Val	Pro	Thr	Ile	Lys	Ile	His	Thr	Ile	Ser	Leu	Gly	Glu	Asn	Gly	Glu	450	455	460	

Glu Val  
465

<210> 19  
<211> 466  
<212> PRT  
<213> Mus musculus

<400> 19  
Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His  
1 5 10 15  
Pro Pro Ala Gln Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30  
Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
35 40 45  
Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
50 55 60  
Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
65 70 75 80  
Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
85 90 95  
Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
100 105 110  
Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
115 120 125  
Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val  
130 135 140  
Arg Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
145 150 155 160  
Pro Leu Phe Gly Trp Arg Gln Gln Ala Pro Glu Asp Glu Thr Ile Cys  
165 170 175  
Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
180 185 190  
Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr

195	200	205
Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr		
210	215	220
Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn		
225	230	235 240
Val Pro Ala Glu Gly Ser Gly Val Ser Ser Ala Lys Asn Lys Thr His		
245	250	255
Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys		
260	265	270
Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe		
275	280	285
Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asn Phe Lys Pro Pro		
290	295	300
Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys		
305	310	315 320
Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala		
325	330	335
Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser		
340	345	350
Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu		
355	360	365
Glu Gln His Arg Gly Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr		
370	375	380
Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe		
385	390	395 400
Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Met Pro Lys Asp Gln		
405	410	415
Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val		
420	425	430
Cys Cys Cys Val Gly Ser Ser Thr Pro Arg Pro Glu Glu Asn His Gln		
435	440	445
Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu		





Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
225 230 235 240

Ala Gln Val Gly Gly Ser Gly Val Thr Ser Ala Lys Asn Lys Thr His  
245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
275 280 285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Arg Pro Ser  
290 295 300

Glu Thr Val Phe Lys Ile Ala Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
305 310 315 320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
325 330 335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
340 345 350

Lys His Thr Leu Gly Tyr Thr Leu His Ala Pro Ser His Val Leu Glu  
355 360 365

Gly Gln His Lys Asp Leu Val Arg Ile Pro Val Gly Ser Ala Glu Thr  
370 375 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Ile Phe  
385 390 395 400

Ser Ser Leu Pro Arg Gly Ser Ala Arg Met Ala Val Ala Arg Asp Pro  
405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
420 425 430

Cys Cys Cys Leu Gly Pro Ser Thr Pro Ser His Gly Glu Asn His Gln  
435 440 445

Ile Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
 450 455 460

Glu Val  
 465

<210> 21  
 <211> 295  
 <212> PRT  
 <213> Canis familiaris

<400> 21  
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Thr Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Pro Val Gly Gly Thr Gly Val Ser Ser Ala Lys Asn Lys Thr His  
 245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285

Phe Leu Val Met Pro Ile Gly  
 290 295

<210> 22  
 <211> 466  
 <212> PRT  
 <213> Oryctolagus cuniculus

<400> 22  
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala

100	105	110
Ser Ile Ile Ser Leu Cys Val Ile Ser Ile Asp Arg Tyr Ile Gly Val		
115	120	125
Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu		
130	135	140
Arg Ala Leu Leu Cys Val Trp Ala Phe Ser Leu Val Ile Ser Val Gly		
145	150	155 160
Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Asp Asp Glu Thr Ile Cys		
	165	170 175
Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser		
	180	185 190
Phe Tyr Val Pro Leu Thr Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr		
	195	200 205
Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr		
	210	215 220
Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn		
225	230	235 240
Ala Pro Ala Gly Gly Ser Gly Val Ala Ser Ala Lys Asn Lys Thr His		
	245	250 255
Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys		
	260	265 270
Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe		
	275	280 285
Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Pro		
	290	295 300
Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys		
305	310	315 320
Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala		
	325	330 335
Phe Gln Asn Val Leu Lys Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser		
	340	345 350
Lys His Ala Leu Gly Tyr Thr Leu His Ala Pro Ser Gln Ala Leu Glu		

355                      360                      365  
 Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
 370                      375                      380  
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385                      390                      395                      400  
 Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln  
 405                      410                      415  
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420                      425                      430  
 Cys Cys Cys Val Gly Pro Ser Thr Pro Asn Pro Gly Glu Asn His Gln  
 435                      440                      445  
 Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
 450                      455                      460  
 Glu Val  
 465  
 <210> 23  
 <211> 466  
 <212> PRT  
 <213> Homo sapiens  
 <400> 23  
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1                      5                      10                      15  
 Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20                      25                      30  
 Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35                      40                      45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50                      55                      60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65                      70                      75                      80  
 Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85                      90                      95

Val	Phe	Cys	Asn	Ile	Trp	Ala	Ala	Val	Asp	Val	Leu	Cys	Cys	Thr	Ala	100	105	110
Ser	Ile	Met	Gly	Leu	Cys	Ile	Ile	Ser	Ile	Asp	Arg	Tyr	Ile	Gly	Val	115	120	125
Ser	Tyr	Pro	Leu	Arg	Tyr	Pro	Thr	Ile	Val	Thr	Gln	Arg	Arg	Gly	Leu	130	135	140
Met	Ala	Leu	Leu	Cys	Val	Trp	Ala	Leu	Ser	Leu	Val	Ile	Ser	Ile	Gly	145	150	155
Pro	Leu	Phe	Gly	Trp	Arg	Gln	Pro	Ala	Pro	Glu	Asp	Glu	Thr	Ile	Cys	165	170	175
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser	180	185	190
Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr	195	200	205
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr	210	215	220
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn	225	230	235
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His	245	250	255
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	260	265	270
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe	275	280	285
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser	290	295	300
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys	305	310	315
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala	325	330	335
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Cys	Arg	Lys	Gln	Ser	Ser	340	345	350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
 370 375 380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
 405 410 415

Ser Ser Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420 425 430

Cys Cys Cys Val Gly Pro Ser Thr Pro Ser Leu Asp Lys Asn His Gln  
 435 440 445

Val Pro Thr Ile Lys Val His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
 450 455 460

Glu Val  
 465

<210> 24  
 <211> 470  
 <212> PRT  
 <213> *Oryzias latipes*

<400> 24  
 Met Thr Pro Ser Ser Val Thr Leu Asn Cys Ser Asn Cys Ser His Val  
 1 5 10 15

Leu Ala Pro Glu Leu Asn Thr Val Lys Ala Val Val Leu Gly Met Val  
 20 25 30

Leu Gly Ile Phe Ile Leu Phe Gly Val Ile Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Val Cys His Arg His Leu Gln Thr Val Thr Tyr Tyr Phe  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Asp Arg Trp Val Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala	100	105	110
Ser Ile Met Ser Leu Cys Val Ile Ser Val Asp Arg Tyr Ile Gly Val	115	120	125
Ser Tyr Pro Leu Arg Tyr Pro Ala Ile Met Thr Lys Arg Arg Ala Leu	130	135	140
Leu Ala Val Met Leu Leu Trp Val Leu Ser Val Ile Ile Ser Ile Gly	145	150	155 160
Pro Leu Phe Gly Trp Lys Glu Pro Ala Pro Glu Asp Glu Thr Val Cys	165	170	175
Lys Ile Thr Glu Glu Pro Gly Tyr Ala Ile Phe Ser Ala Val Gly Ser	180	185	190
Phe Tyr Leu Pro Leu Ala Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr	195	200	205
Val Val Ala Gln Lys Glu Ser Arg Gly Leu Lys Glu Gly Gln Lys Ile	210	215	220
Glu Lys Ser Asp Ser Glu Gln Val Ile Leu Arg Met His Arg Gly Asn	225	230	235 240
Thr Thr Val Ser Glu Asp Glu Ala Leu Arg Ser Arg Thr His Phe Ala	245	250	255
Leu Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu	260	265	270
Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu	275	280	285
Val Leu Pro Ile Gly Ser Ile Phe Pro Ala Tyr Arg Pro Ser Asp Thr	290	295	300
Val Phe Lys Ile Thr Phe Trp Leu Gly Tyr Phe Asn Ser Cys Ile Asn	305	310	315 320
Pro Ile Ile Tyr Leu Cys Ser Asn Gln Glu Phe Lys Lys Ala Phe Gln	325	330	335
Ser Leu Leu Gly Val His Cys Leu Arg Met Thr Pro Arg Ala His His	340	345	350



His His Leu Ser Val Gly Gln Ser Gln Thr Gln Gly His Ser Leu Thr  
 355 360 365

Ile Ser Leu Asp Ser Lys Gly Ala Pro Cys Arg Leu Ser Pro Ser Ser  
 370 375 380

Ser Val Ala Leu Ser Arg Thr Pro Ser Ser Arg Asp Ser Arg Glu Trp  
 385 390 395 400

Arg Val Phe Ser Gly Gly Pro Ile Asn Ser Gly Pro Gly Pro Thr Glu  
 405 410 415

Ala Gly Arg Ala Lys Val Ala Lys Leu Cys Asn Lys Ser Leu His Arg  
 420 425 430

Thr Cys Cys Cys Ile Leu Arg Ala Arg Thr Pro Thr Gln Asp Pro Ala  
 435 440 445

Pro Leu Gly Asp Leu Pro Thr Ile Lys Ile His Gln Leu Ser Leu Ser  
 450 455 460

Glu Lys Gly Glu Ser Val  
 465 470

<210> 25  
 <211> 391  
 <212> PRT  
 <213> Branchiostoma lanceolatum

<400> 25  
 Met Ser Ala Asn Thr Thr Val Ser Pro Thr Glu Thr Thr Ala Asn Leu  
 1 5 10 15

Thr Ala Asn Ser Thr Glu Ala Ser Val Gly Ser Cys Phe Ala Pro Asn  
 20 25 30

Pro Tyr Ser Ala Gly Val Gln Ala Val Leu Gly Leu Ile Thr Val Ile  
 35 40 45

Leu Ile Leu Leu Thr Val Ile Gly Asn Val Leu Val Ile Leu Ala Val  
 50 55 60

Thr Cys His Arg Lys Met Arg Thr Val Thr Asn Phe Phe Ile Val Ser  
 65 70 75 80

Leu Ala Cys Ala Asp Leu Ser Val Gly Ile Thr Val Leu Pro Phe Ala

85								90				95					
Ala	Thr	Asn	Asp	Ile	Leu	Gly	Tyr	Trp	Pro	Phe	Gly	Gly	Tyr	Cys	Asp		
100								105				110					
Val	Trp	Val	Ser	Phe	Asp	Val	Leu	Asn	Ser	Thr	Ala	Ser	Ile	Leu	Asn		
115								120				125					
Leu	Val	Val	Ile	Ala	Phe	Asp	Arg	Phe	Leu	Ala	Ile	Thr	Ala	Pro	Phe		
130								135				140					
Thr	Tyr	His	Thr	Arg	Met	Thr	Glu	Arg	Thr	Ala	Gly	Ile	Leu	Ile	Ala		
145								150				155				160	
Thr	Val	Trp	Gly	Ile	Ser	Leu	Val	Val	Ser	Phe	Leu	Pro	Ile	Gln	Ala		
165								170				175					
Gly	Trp	Tyr	Arg	Asp	Asn	Gln	Ser	Glu	Glu	Ala	Leu	Ala	Ile	Tyr	Ser		
180								185				190					
Asp	Pro	Cys	Leu	Cys	Ile	Phe	Thr	Ala	Ser	Thr	Ala	Tyr	Thr	Ile	Val		
195								200				205					
Ser	Ser	Leu	Ile	Ser	Phe	Tyr	Ile	Pro	Leu	Leu	Ile	Met	Leu	Val	Phe		
210								215				220					
Tyr	Gly	Ile	Ile	Phe	Lys	Ala	Ala	Arg	Asp	Gln	Ala	Arg	Lys	Ile	Asn		
225								230				235				240	
Ala	Leu	Glu	Gly	Arg	Leu	Glu	Gln	Glu	Asn	Asn	Arg	Gly	Lys	Lys	Ile		
245								250				255					
Ser	Leu	Ala	Lys	Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Gly	Ile	Ile	Met		
260								265				270					
Gly	Val	Phe	Ile	Leu	Cys	Trp	Leu	Pro	Phe	Phe	Val	Val	Asn	Ile	Val		
275								280				285					
Asn	Pro	Phe	Cys	Asp	Arg	Cys	Val	Gln	Pro	Ala	Val	Phe	Ile	Ala	Leu		
290								295				300					
Thr	Trp	Leu	Gly	Trp	Ile	Asn	Ser	Cys	Phe	Asn	Pro	Ile	Ile	Tyr	Ala		
305								310				315				320	
Phe	Asn	Lys	Glu	Phe	Arg	Lys	Val	Phe	Val	Lys	Met	Ile	Cys	Cys	His		
325								330				335					
Lys	Cys	Arg	Gly	Val	Thr	Val	Gly	Pro	Asn	His	Ala	Asp	Leu	Asn	Tyr		

340                                      345                                      350  
 Asp Pro Val Ala Met Arg Leu Lys Lys Arg Gly Glu Asn Ala Asn Gly  
           355                                      360                                      365  
 Thr Val Asn Gly Asp Ala Asn Gly Lys Ala Asn Gly Asn Ile Glu Ala  
           370                                      375                                      380  
 Gly Glu Gly Thr Ser Ser Ser  
 385                                      390

<210> 26  
 <211> 36  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthesized  
           peptide

<400> 26  
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
       1                                      5                                      10                                      15  
 Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
           20                                      25                                      30  
 Ile Arg Ser Thr  
           35

<210> 27  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthesized  
           peptide

<400> 27  
 Gln Arg Lys Pro Gln Leu Leu Gln Val Thr Asn Arg Phe  
       1                                      5                                      10

<210> 28  
 <211> 5

<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized  
peptide

<400> 28  
Trp Pro Leu Asn Ser  
1 5

<210> 29  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthesized  
peptide

<400> 29  
Asp Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met  
1 5 10 15

Thr Gln Arg Arg  
20

<210> 30  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthesized  
peptide

<400> 30  
Gly Gln Ala Ala Phe Asp Glu Arg Asn Ala Leu Cys Ser Met Ile Trp  
1 5 10 15

Gly Ala Ser Pro Ser Tyr Thr  
20

<210> 31  
<211> 182

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized peptide

<400> 31

Cys Ala Ala Arg Arg Gln His Ala Leu Leu Tyr Asn Val Lys Arg His  
1 5 10 15

Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu  
20 25 30

Gly Ala Glu Lys Lys Glu Glu Phe Gln Asp Glu Ser Glu Phe Arg Arg  
35 40 45

Gln His Glu Gly Glu Val Lys Ala Lys Glu Gly Arg Met Glu Ala Lys  
50 55 60

Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser  
65 70 75 80

Ser Val Glu Ala Gly Ser Glu Glu Val Arg Glu Ser Ser Thr Val Ala  
85 90 95

Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu  
100 105 110

Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser  
115 120 125

Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn  
130 135 140

Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro  
145 150 155 160

Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr  
165 170 175

Gln Cys Lys Ala Ala Lys  
180

<210> 32

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized peptide

<400> 32

Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro Gln  
1 5 10 15

<210> 33

<211> 55

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthesized peptide

<400> 33

Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp Met Leu  
1 5 10 15

Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys Glu Asp Ser His Pro  
20 25 30

Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser  
35 40 45

Tyr Asp Ser Ala Thr Phe Pro  
50 55

<210> 34

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HGPRBMY8 sense primer

<400> 34

gcagagcact cctccactct

20

<210> 35

<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HGPRBMY8  
anti-sense primer

<400> 35  
agcaggcaat catgacaatc

20

<210> 36  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: GPCR84 sense  
primer

<400> 36  
gttagcctca cccacctgtt

20

<210> 37  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: GPCR84  
anti-sense primer

<400> 37  
cacaatccag gtgccataga

20

<210> 38  
<211> 42  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HGPRBMY8 5'  
primer

<400> 38

gtccccaagc ttgcaccatg acgtccacct gcaccaacag ca

42

<210> 39

<211> 62

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: HGPRBMY8 3'

Flag-tag primer

<400> 39

cgggataccta cttgtcgtcg tcgtccttgt agtccatagg aaaagtagca gaatcgtagg 60  
aa 62

<210> 40

<211> 407

<212> PRT

<213> Homo sapiens

<400> 40

Met Ser Leu Asn Ser Ser Leu Ser Cys Arg Lys Glu Leu Ser Asn Leu  
1 5 10 15

Thr Glu Glu Glu Gly Gly Glu Gly Gly Val Ile Ile Thr Gln Phe Ile  
20 25 30

Ala Ile Ile Val Ile Thr Ile Phe Val Cys Leu Gly Asn Leu Val Ile  
35 40 45

Val Val Thr Leu Tyr Lys Lys Ser Tyr Leu Leu Thr Leu Ser Asn Lys  
50 55 60

Phe Val Phe Ser Leu Thr Leu Ser Asn Phe Leu Leu Ser Val Leu Val  
65 70 75 80

Leu Pro Phe Val Val Thr Ser Ser Ile Arg Arg Glu Trp Ile Phe Gly  
85 90 95

Val Val Trp Cys Asn Phe Ser Ala Leu Leu Tyr Leu Leu Ile Ser Ser  
100 105 110

Ala Ser Met Leu Thr Leu Gly Val Ile Ala Ile Asp Arg Tyr Tyr Ala  
115 120 125

Val Leu Tyr Pro Met Val Tyr Pro Met Lys Ile Thr Gly Asn Arg Ala



130	135	140															
Val	Met	Ala	Leu	Val	Tyr	Ile	Trp	Leu	His	Ser	Leu	Ile	Gly	Cys	Leu		
145					150					155					160		
Pro	Pro	Leu	Phe	Gly	Trp	Ser	Ser	Val	Glu	Phe	Asp	Glu	Phe	Lys	Trp		
				165					170					175			
Met	Cys	Val	Ala	Ala	Trp	His	Arg	Glu	Pro	Gly	Tyr	Thr	Ala	Phe	Trp		
			180					185					190				
Gln	Ile	Trp	Cys	Ala	Leu	Phe	Pro	Phe	Leu	Val	Met	Leu	Val	Cys	Tyr		
	195						200					205					
Gly	Phe	Ile	Phe	Arg	Val	Ala	Arg	Val	Lys	Ala	Arg	Lys	Val	His	Cys		
210					215						220						
Gly	Thr	Val	Val	Ile	Val	Glu	Glu	Asp	Ala	Gln	Arg	Thr	Gly	Arg	Lys		
225				230						235					240		
Asn	Ser	Ser	Thr	Ser	Thr	Ser	Ser	Ser	Gly	Ser	Arg	Arg	Asn	Ala	Phe		
			245						250					255			
Gln	Gly	Val	Val	Tyr	Ser	Ala	Asn	Gln	Cys	Lys	Ala	Leu	Ile	Thr	Ile		
		260					265						270				
Leu	Val	Val	Leu	Gly	Ala	Phe	Met	Val	Thr	Trp	Gly	Pro	Tyr	Met	Val		
	275						280					285					
Val	Ile	Ala	Ser	Glu	Ala	Leu	Trp	Gly	Lys	Ser	Ser	Val	Ser	Pro	Ser		
290					295						300						
Leu	Glu	Thr	Trp	Ala	Thr	Trp	Leu	Ser	Phe	Ala	Ser	Ala	Val	Cys	His		
305				310					315					320			
Pro	Leu	Ile	Tyr	Gly	Leu	Trp	Asn	Lys	Thr	Val	Arg	Lys	Glu	Leu	Leu		
				325					330					335			
Gly	Met	Cys	Phe	Gly	Asp	Arg	Tyr	Tyr	Arg	Glu	Pro	Phe	Val	Gln	Arg		
			340					345					350				
Gln	Arg	Thr	Ser	Arg	Leu	Phe	Ser	Ile	Ser	Asn	Arg	Ile	Thr	Asp	Leu		
	355						360					365					
Gly	Leu	Ser	Pro	His	Leu	Thr	Ala	Leu	Met	Ala	Gly	Gly	Gln	Pro	Leu		
370					375					380							
Gly	His	Ser	Ser	Ser	Thr	Gly	Asp	Thr	Gly	Phe	Ser	Cys	Ser	Gln	Asp		

385                      390                      395                      400  
 Ser Gly Asn Leu Arg Ala Leu  
                          405  
  
 <210> 41  
 <211> 448  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 41  
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
   1                          5                          10                          15  
  
 Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
                           20                          25                          30  
  
 Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
                           35                          40                          45  
  
 Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
                           50                          55                          60  
  
 Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
   65                          70                          75                          80  
  
 Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
                           85                          90                          95  
  
 Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
                          100                         105                         110  
  
 Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Val Ser Val Asp  
                          115                         120                         125  
  
 Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
   130                         135                         140  
  
 Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
  145                         150                         155                         160  
  
 Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
                          165                         170                         175  
  
 Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
                          180                         185                         190

Thr	Ile	Leu	Ser	Val	Val	Ser	Phe	Ile	Val	Ile	Pro	Leu	Ile	Val	Met	195	200	205	
Ile	Ala	Cys	Tyr	Ser	Val	Val	Phe	Cys	Ala	Ala	Arg	Arg	Gln	His	Ala	210	215	220	
Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val	Lys	Asp	225	230	235	240
Cys	Val	Glu	Asn	Glu	Asp	Glu	Glu	Gly	Ala	Glu	Lys	Lys	Glu	Glu	Phe	245	250	255	
Gln	Asp	Glu	Ser	Glu	Phe	Arg	Arg	Gln	His	Glu	Gly	Glu	Val	Lys	Ala	260	265	270	
Lys	Glu	Gly	Arg	Met	Glu	Ala	Lys	Asp	Gly	Ser	Leu	Lys	Ala	Lys	Glu	275	280	285	
Gly	Ser	Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu	290	295	300	
Glu	Val	Arg	Glu	Ser	Ser	Thr	Val	Ala	Ser	Asp	Gly	Ser	Met	Glu	Gly	305	310	315	320
Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys	Ala	Asp	Lys	325	330	335	
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Asp	340	345	350	
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu	355	360	365	
Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn	370	375	380	
Ser	Asn	Pro	Pro	Leu	Pro	Arg	Cys	Tyr	Gln	Cys	Lys	Ala	Lys	Lys	Val	385	390	395	400
Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys	405	410	415	
Phe	Leu	Ala	Val	Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu	Gly	420	425	430	
Gly	Thr	Glu	Gly	Lys	Ile	Val	Pro	Ser	Tyr	Asp	Ser	Ala	Thr	Phe	Pro	435	440	445	

<210> 42

<211> 448

<212> PRT

<213> Homo sapiens

<400> 42

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Val Ser Val Asp  
115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
 210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
 245 250 255

Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
 260 265 270

Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
 275 280 285

Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
 290 295 300

Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
 305 310 315 320

Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys  
 325 330 335

Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Asp  
 340 345 350

Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu  
 355 360 365

Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn  
 370 375 380

Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val  
 385 390 395 400

Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys  
 405 410 415

Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly  
 420 425 430

Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
 435 440 445

<210> 43

<211> 448

<212> PRT

<213> Homo sapiens

<400> 43

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp  
115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala

210	215	220
Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp		
225	230	235 240
Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe		
	245	250 255
Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala		
	260	265 270
Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu		
	275	280 285
Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu		
	290	295 300
Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly		
305	310	315 320
Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys		
	325	330 335
Gly Arg Thr Glu Val Asn Gln Cys Ser Ile Asp Leu Gly Glu Asp Gly		
	340	345 350
Met Glu Phe Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu		
	355	360 365
Ala Val Asn Ile Pro Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn		
	370	375 380
Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Ala Lys Val		
385	390	395 400
Ile Phe Ile Ile Ile Phe Ser Tyr Val Leu Ser Leu Gly Pro Tyr Cys		
	405	410 415
Phe Leu Ala Val Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu Gly		
	420	425 430
Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro		
	435	440 445

<210> 44  
 <211> 1659  
 <212> DNA  
 <213> Homo sapiens

<400> 44  
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 cccacggcat catccgctca accgtgctgg ttatcttctc cgccgcctct ttcgtcggca 180  
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 ttatctttta cctcctcgtc accgacctgc tgcagatttc gctcgtggcc ccctgggtgg 300  
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 gcctcaccga cctgttcgcc ttcgccagcg tcaacaccat tgtcttggtg tcagtggatc 420  
 gctacttgtc catcatccac cctctctcct acccggtccaa gatgacctag cgccgcgggt 480  
 acctgctcct ctatggcacc tggattgtgg ccacctgca gagcactcct ccactctacg 540  
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 gaagcacggg gaccagttag agtagttag aggccagggg cagcgaggag gtcagagaga 960  
 gcagcacggg gccagcgac ggcagcatgg agggtaagga aggcagcacc aaagttgagg 1020  
 agaacagcat gaaggcagac aagggtcgca cagaggtaaa ccagtgcagc attgacttgg 1080  
 gtgaagatgg catggagttt ggtgaagacg acatcaattt cagtgaggat gacgtcgagg 1140  
 cagtgaacat cccggagagc ctcccaccca gtcgtcgtaa cagcaacagc aacctctctc 1200  
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 tgctatccct ggggccctac tgcttttttag cagtcctggc cgtgtgggtg gatgtcgaaa 1320  
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 tccaccctta tgtctatggc tacatgcaca agaccattaa gaaggaaatc caggacatgc 1440  
 tgaagaagtt cttctgcaag gaaaagcccc cgaaagaaga tagccacca gacctgccc 1500  
 gaacagaggg tgggactgaa ggcaagattg tcccttctta cgattctgct acttttctt 1560  
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 taaaactacc aggttcaatc actggttatg ctttctgtg 1659

<210> 45  
 <211> 1527  
 <212> DNA  
 <213> Homo sapiens

<400> 45  
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 ttctctgccc cctctttctg cggcaacata gtgctggcgc tagtggtgca gcgcaagccg 180  
 cagctgctgc aggtgaccaa ccgtttttatc tttaacctcc tcgtcacga cctgctgcag 240  
 atttctgctc tggccccctg ggtggtggcc acctctgtgc ctctcttctg gccctcaac 300  
 agccacttct gcacggccct ggttagcctc accacactgt tcgccttcgc cagcgtcaac 360



accattgtcg	tggtgtcagt	ggatcgctac	ttgtccatca	tccaccctct	ctcctacccg	420
tccaagatga	cccagcgccg	cggttacctg	ctcctctatg	gcacctggat	tgtggccatc	480
ctgcagagca	ctcctccact	ctacggctgg	ggccaggctg	cctttgatga	gcgcaatgct	540
ctctgtcca	tgatctgggg	ggccagcccc	agctacacta	ttctcagcgt	ggtgtccttc	600
atcgtcattc	cactgattgt	catgattgcc	tgctactccg	tggtgttctg	tgcagcccg	660
aggcagcatg	ctctgctgta	caatgtcaag	agacacagct	tggaagtgcg	agtcaaggac	720
tgtgtggaga	atgaggatga	agaggagca	gagaagaagg	aggagtcca	ggatgagagt	780
gagtttcgcc	gccagcatga	aggtgaggtc	aaggccaagg	agggcagaat	ggaagccaag	840
gacggcagcc	tgaaggccaa	ggaaggaagc	acggggacca	gtgagagtag	tgtagaggcc	900
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aaggaaggca	gcaccaaagt	tgaggagaac	agcatgaagg	cagacaagg	tcgcacagag	1020
gtcaaccagt	gcagcattga	cttgggtgaa	gatgacatgg	agtttggtga	agacgacatc	1080
aatttcagt	aggatgacgt	cgaggcagt	aacatcccgg	agagcctccc	accagtcgt	1140
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atcttcatca	tcatcttctc	ctatgtgcta	tccctggggc	cctactgctt	tttagcagtc	1260
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tggtcttct	tcctgcagt	ctgcatccac	ccctatgtct	atggctacat	gcacaagacc	1380
attaagaagg	aaatccagga	catgctgaag	aagttcttct	gcaaggaaaa	gccccgaaa	1440
gaagatagcc	accagacct	gcccgaaca	gaggggtggga	ctgaaggcaa	gattgtccct	1500
tcctacgatt	ctgctacttt	tccttga				1527

<210> 46

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 46

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ttcctcgccg	cctctttcgt	cggcaacata	gtgctggcgc	tagtgttgca	gcgcaagccg	180
cagctgctgc	aggtgaccaa	ccgttttate	tttaacctcc	tcgtcaccga	cctgctgcag	240
atttcgctcg	tggtccctctg	ggtgggtggcc	acctctgtgc	ctctcttctg	gcccccaac	300
agccacttct	gcacggccct	ggttagcctc	accacactgt	tcgccttcgc	cagcgtcaac	360
accattgtcg	tggtgtcagt	ggatcgctac	ttgtccatca	tccaccctct	ctcctacccg	420
tccaagatga	cccagcgccg	cggttacctg	ctcctctatg	gcacctggat	tgtggccatc	480
ctgcagagca	ctcctccact	ctacggctgg	ggccaggctg	cctttgatga	gcgcaatgct	540
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atcgtcattc	cactgattgt	catgattgcc	tgctactccg	tggtgttctg	tgcagcccg	660
aggcagcatg	ctctgctgta	caatgtcaag	agacacagct	tggaagtgcg	agtcaaggac	720
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gagtttcgcc	gccagcatga	aggtgaggtc	aaggccaagg	agggcagaat	ggaagccaag	840
gacggcagcc	tgaaggccaa	ggaaggaagc	acggggacca	gtgagagtag	tgtagaggcc	900
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aaggaaggca	gcaccaaagt	tgaggagaac	agcatgaagg	cagacaagg	tcgcacagag	1020
gtcaaccagt	gcagcattga	cttgggtgaa	gatgacatgg	agtttggtga	agacgacatc	1080
aatttcagt	aggatgacgt	cgaggcagt	aacatcccgg	agagcctccc	accagtcgt	1140
cgtaacagca	acagcaaccc	tcctctgccc	aggtgctacc	agtgcaaagc	taagaaagt	1200

atcttcatca	tcattttctc	ctatgtgcta	tccctggggc	cctactgctt	tttagcagtc	1260
ctggccgtgt	gggtggatgt	cgaaacccag	gtaccccagt	gggtgatcac	cataatcatc	1320
tggtttttct	tctgcagtg	ctgcatccac	ccctatgtct	atggctacat	gcacaagacc	1380
attaagaagg	aatccagga	catgctgaag	aagttcttct	gcaaggaaaa	gccccgaaa	1440
gaagatagcc	accagacct	gcccggaaca	gaggggtggga	ctgaaggcaa	gattgtccct	1500
tcctacgatt	ctgctacttt	tccttga				1527

<210> 47

<211> 1580

<212> DNA

<213> Homo sapiens

<400> 47

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cggcatcatc	cgtcaaccg	tgctggttat	cttctctgcc	gcctctttcg	tcggcaacat	180
agtgtggcg	ctagtgttgc	agcgcaagcc	gcagctgctg	caggtgacca	accgttttat	240
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cacctctgtg	cctctcttct	ggccccctca	cagccacttc	tgcacggccc	tggttagcct	360
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cttgtccatc	atccaccctc	tctcctaccc	gtccaagatg	accagcgcgc	gcggttacct	480
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agatgacatg	gagtttggtg	aagacgacat	caatttcagt	gaggatgacg	tcgaggcagt	1140
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caggtgctac	cagtgc aaaag	ctgctaaagt	gatcttcate	atcattttct	cctatgtgct	1260
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cccctatgtc	tatggctaca	tgcacaagac	cattaagaag	gaaatccagg	acatgctgaa	1440
gaagttcttc	tgcaaggaaa	agcccccgaa	agaagatagc	caccagacc	tgccccgaac	1500
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<210> 48

<211> 1527

<212> DNA

<213> Homo sapiens

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<223> n=a or t or g or c

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ttcctcgccg cctcttttcgt cggcaacata gtgctggcgc tagtggttgca gcgcaagccg 180  
cagctgctgc aggtgaccaa ccgtttttatc tttaacctcc tcgtcaccga cctgctgcag 240  
atttcgctcg tggccccctg ggtgggtggcc acctctgtgc ctctcttctg gcccctcaac 300  
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accattgten tgggtgtcagt ggatcgctac ttgtccatca tccaccctct ctctacccg 420  
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aaggaaggca gcaccaaagt tgaggagaac agcatgaagg cagacaaggg tcgcacagag 1020  
gtcaaccagt gcagcattga cttgggtgaa gatgncatgg agtttggtga agacgacatc 1080  
aatttcagtg aggatgacgt cgaggcagtg aacatcccgg agagcctccc acccagtcgt 1140  
cgtaacagca acagcaaccc tcctctgccc aggtgctacc agtgcaaagc tnnnaaagtg 1200  
atcttcatca tcattttctc ctatgtgcta tccctggggc cctactgctt tttagcagtc 1260  
ctggccgtgt ggggtggatgt cgaaaccag gtacccaggt ggggtgatcac cataatcatc 1320  
tggtttttct tcctgcagtg ctgcatccac ccctatgtct atggctacat gcacaagacc 1380  
attaagaagg aaatccagga catgctgaag aagttcttct gcaaggaaaa gccccgaaa 1440  
gaagatagcc acccagacct gcccggaaca gaggggtggga ctgaaggcaa gattgtccct 1500  
tcctacgatt ctgctacttt tccttga 1527

<210> 49  
<211> 508  
<212> PRT  
<213> Homo sapiens

<220>  
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<223> Xaa=Unknown, modified, or any amino acid

<220>  
<221> VARIANT  
<222> (398)  
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<400> 49

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
35 40 45

Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
50 55 60

Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
65 70 75 80

Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
85 90 95

Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
100 105 110

Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Xaa Val Ser Val Asp  
115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
130 135 140

Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
180 185 190

Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
210 215 220

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
225 230 235 240

Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe

				245				250				255			
Gln	Asp	Glu	Ser	Glu	Phe	Arg	Arg	Gln	His	Glu	Gly	Glu	Val	Lys	Ala
260				265				270							
Lys	Glu	Gly	Arg	Met	Glu	Ala	Lys	Asp	Gly	Ser	Leu	Lys	Ala	Lys	Glu
275				280				285							
Gly	Ser	Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu
290				295				300							
Glu	Val	Arg	Glu	Ser	Ser	Thr	Val	Ala	Ser	Asp	Gly	Ser	Met	Glu	Gly
305				310				315				320			
Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys	Ala	Asp	Lys
325				330				335							
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Xaa
340				345				350							
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu
355				360				365							
Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn
370				375				380							
Ser	Asn	Pro	Pro	Leu	Pro	Arg	Cys	Tyr	Gln	Cys	Lys	Ala	Xaa	Lys	Val
385				390				395				400			
Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys
405				410				415							
Phe	Leu	Ala	Val	Leu	Ala	Val	Trp	Val	Asp	Val	Glu	Thr	Gln	Val	Pro
420				425				430							
Gln	Trp	Val	Ile	Thr	Ile	Ile	Ile	Trp	Leu	Phe	Phe	Leu	Gln	Cys	Cys
435				440				445							
Ile	His	Pro	Tyr	Val	Tyr	Gly	Tyr	Met	His	Lys	Thr	Ile	Lys	Lys	Glu
450				455				460							
Ile	Gln	Asp	Met	Leu	Lys	Lys	Phe	Phe	Cys	Lys	Glu	Lys	Pro	Pro	Lys
465				470				475				480			
Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu	Gly	Gly	Thr	Glu	Gly
485				490				495							
Lys	Ile	Val	Pro	Ser	Tyr	Asp	Ser	Ala	Thr	Phe	Pro				

<210> 50  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 50  
caccattgtc ttggtgtcag t 21

<210> 51  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 51  
caccattgtc gtggtgtcag t 21

<210> 52  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 52  
ggtgaagatg acatggagtt t 21

<210> 53  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 53

ggtgaagatg gcatggagtt t 21

<210> 54  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 54  
gtgcaaagct gctaaagtga t 21

<210> 55  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 55  
gtgcaaagct actaaagtga t 21

<210> 56  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 56  
tgcaaagctg ctaaagtgat c 21

<210> 57  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 57

tgcaaagctg ataaagtgat c

21

<210> 58

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SNP

<400> 58

gcaaagctgc taaagtgatc t

21

<210> 59

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SNP

<400> 59

gcaaagctgc gaaagtgatc t

21

<210> 60

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: GAPDH F3  
Forward primer

<400> 60

agccgagcca catcgct

17

<210> 61

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: GAPDH R1  
Reverse primer



<400> 61  
 gtgaccaggc gcccaatac 19

<210> 62  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: GAPDH-PVIC  
 Tagman(R) Probe

<400> 62  
 caaatccgtt gactccgacc ttcacctt 28

<210> 63  
 <211> 99  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 Oligonucleotide 1

<220>  
 <221> modified\_base  
 <222> (25)..(84)  
 <223> n=a+g+c+t and b=c+g+t

<400> 63  
 cgaagcgtaa gggcccagcc ggcennbnnb nnnbnnbnnb nnnbnnbnnb bnnbnnbnnb 60  
 nnnbnnbnnb nnnbnnbnnb bnnbccgggt ccgggcggc 99

<210> 64  
 <211> 95  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:  
 Oligonucleotide 2N=A+G+C+T and V=C+A+G

<220>  
 <221> modified\_base

<222> (21)..(80)

<223> n=a or g or c or t; v=c or a or g

<400> 64

aaaaggaaaa aagcggccgc vnnvnnvnnv nnvnnvnnvn nvnnvnnvnn vnnvnnvnnv 60  
nnvnnvnnvn nvnnvnnvnn gccgcccga cccgg 95

<210> 65

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 65

Pro Gly Pro Gly Gly  
1 5

<210> 66

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 66

Gly Asp Phe Trp Tyr Glu Ala Cys Glu Ser Ser Cys Ala Phe Trp  
1 5 10 15

<210> 67

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 67

Leu Glu Trp Gly Ser Asp Val Phe Tyr Asp Val Tyr Asp Cys Cys  
1 5 10 15

<210> 68  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 68  
Cys Leu Arg Ser Gly Thr Gly Cys Ala Phe Gln Leu Tyr Arg Phe  
1 5 10 15

<210> 69  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 69  
Asn Asn Phe Pro Cys Leu Arg Ser Gly Arg Asn Cys Asp Ala Gly  
1 5 10 15

<210> 70  
<211> 15  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 70  
Arg Ile Val Pro Asn Gly Tyr Phe Asn Val His Gly Arg Ser Leu  
1 5 10 15

<210> 71  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 71

Arg Ile Asp Ser Cys Ala Lys Tyr Phe Leu Arg Ser Cys Asp  
1 5 10

<210> 72

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic 5' primer

<400> 72

gcagcagcgg ccgcaccgtg ctgggttatct tcctcgccg

39

<210> 73

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic 3' primer

<400> 73

gcagcagtcg acaggaaaag tagcagaatc gtagg

35

<210> 74

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic 5' primer

<400> 74

gcagcagcgg ccgcatgacg tccacctgca ccaacagc

38

<210> 75  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic 3'  
primer

<400> 75  
gcagcagtcg acatagacat aggggtggat gcagcac

37

<210> 76  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 76  
Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
1 5 10

<210> 77  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 77  
Gln Leu Leu Gln Val Thr Asn Arg Phe Ile Phe Asn Leu  
1 5 10

<210> 78  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 78

Tyr Pro Ser Lys Met Thr Gln Arg Arg Gly Tyr Leu Leu  
1 5 10

<210> 79

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 79

Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser  
1 5 10

<210> 80

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 80

Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser  
1 5 10

<210> 81

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81

Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys Gly Arg  
1 5 10

<210> 82  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
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           polypeptide

<400> 82  
 Glu Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn  
   1                  5                  10

<210> 83  
 <211> 13  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           polypeptide

<400> 83  
 Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp  
   1                  5                  10

<210> 84  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
           polypeptide

<400> 84  
 Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
   1                  5                  10

<210> 85  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 85

Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
1 5 10

<210> 86

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 86

Gly Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys  
1 5 10

<210> 87

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 87

Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala Val Asn  
1 5 10

<210> 88

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 88



Pro Pro Lys Glu Asp Ser His Pro Asp Leu Pro Gly Thr Glu  
1 5 10

<210> 89

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 89

Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val  
1 5 10

<210> 90

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 90

Ser Leu Pro Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro  
1 5 10

<210> 91

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 91

Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
1 5 10

<210> 92

<211> 14

<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 92

Ser Thr Arg Glu Ser Asn Ser Ser His Thr Cys Met Pro Leu  
1 5 10

<210> 93

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 93

Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala  
1 5 10

<210> 94

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 94

Ile Ser Leu Ala His Gly Ile Ile Arg Ser Thr Val Leu Val Ile Phe  
1 5 10 15

<210> 95

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 95  
Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr Thr Ile Leu Ser Val  
1 5 10 15

<210> 96  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 96  
Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly  
1 5 10 15

<210> 97  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 97  
Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu  
1 5 10 15

<210> 98  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 98  
Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly  
1 5 10 15

<210> 99  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 99  
Thr Val Ala Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys  
1 5 10 15

<210> 100  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 100  
His Pro Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val  
1 5 10 15

<210> 101  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 101  
Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr  
1 5 10 15

<210> 102  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 102

Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met Ile Ala Cys  
1 5 10 15

Tyr Ser Val Val Phe  
20